50,000 Disaster Victims Speak:

An Empirical Review of the Empirical Literature, 1981 – 2001

Prepared by:
Fran H. Norris
Georgia State University

With the assistance of:
Christopher M. Byrne and Eolia Diaz
Georgia State University
and
Krzysztof Kaniasty
Indiana University of Pennsylvania

For

The National Center for PTSD
And
The Center for Mental Health Services (SAMHSA)

September 2001

Executive Summary

- This three-part report presents a review of the empirical research on the mental health consequences of disasters. PART I summarizes what is known about the potential range, magnitude, and duration of a disaster's effects on the stricken community. PART II identifies the experiential and demographic factors that influence who within that community is most likely to be adversely affected, and PART III describes the psychological and social processes that influence the strength or duration of these effects at the community and individual levels.

- All articles reviewed were published, in English, between 1981 and 2001, thus covering roughly 20 years of quantitative research. Brief summaries of the primary articles are provided in a series of tables in the appendix.

- The overarching goal is to draw conclusions from the research base that have implications for practice in disaster mental health.

PART I: RANGE, MAGNITUDE, AND DURATION OF EFFECTS

- ***Purpose***. In this section, we pay minimal attention to individual differences in outcomes *within* events so as to describe potential and typical results and to identify event- and sample-level predictors of outcomes.

- ***The Data***. A total of 177 articles that described results for 130 distinct samples composed of over 50,000 individuals who experienced 80 different disasters were coded as to disaster type (62% *natural disasters,* 29% *technological disasters*, and 9% *mass violence*), disaster location (60% *USA*, 25% *other developed country*, 15% *developing country*), and sample type (73% *adult survivors*, 16% *youth*, 11% *rescue/recovery workers*), as well as on several methodological variables. After a preliminary review of the studies, each sample was coded as to the presence of 6 sets of outcomes and rated as to its overall severity of impairment.

- ***Range of Outcomes***. Six conceptually related sets of outcomes were observed, as outlined below:

  - ***Specific psychological problems*** were identified in 74% of the samples. Posttraumatic stress or PTSD was found in 65% of the samples, depression or major depression disorder was found in 37% of the samples, and anxiety or generalized anxiety disorder was found in 19% of the samples. Panic disorder and specific phobias were rare.

  - ***Non-specific distress***, assessed by means of global indices of psychological and psychosomatic symptoms, was identified in 39% of the samples.

  - ***Health problems and concerns***, such as self-reported somatic complaints, verified medical conditions, increased taking of sick leave, elevations in physiological indicators of stress, declines in immune functioning, sleep disruption, increased use of substances, and (if previously disabled) relapse and illness burden, were identified in 25% of the samples.

  - ***Chronic problems in living***, identified in 10% of the samples, were assessed rarely but generally found where they were assessed. Such problems included troubled interpersonal relationships, social disruption, family strains and conflicts, excess obligations to provide support, occupational stress, financial stress, environmental worry, and ecological stress.

  - ***Psychosocial resource losses*** were also assessed less frequently than the first 3 sets but nonetheless found in 10% of the samples. Declines in perceived support, social embeddedness, coping self-efficacy, and optimism were at least occasionally observed.

  - ***Problems specific to youth*** included various behavioral problems and separation anxiety among children, and deviance and delinquency among adolescent survivors.

- ***Magnitude of Effects***. To provide a rough estimate of the overall impact of the events studied, we classified each sample's results on a 4-point scale of severity. Of the 130 samples in the primary database:

  - **9% showed *minimal impairment***, meaning that the majority of the sample experienced only transient stress reactions;
  - **52% showed *moderate impairment***, wherein prolonged but subclinical distress was the predominant result;
  - **23% showed *severe impairment***, meaning that 25% to 49% of the sample suffered from criterion-level psychopathology; and
  - **16% showed *very severe impairment***, meaning that 50% or more of the sample suffered from criterion level psychopathology.

  Several variables predicted the sample's overall severity of impairment, as outlined below:

  - ***School-aged youth*** were most likely, and rescue/recovery workers least likely, to show severe impairment: 62% of the school-aged samples experienced severe impairment, compared to 39% of the adult survivor samples and 7% of the rescue/recovery samples.

  - ***Developing countries*** were at greatest risk when location of the disaster was considered. Severe effects were observed in 27% of the U.S. samples, 46% of the samples from other developed countries, and 79% of the samples from developing countries.

  - ***Mass violence*** was, by far, the most disturbing type of disaster. Of the samples that experienced mass violence, 67% were severely impaired, compared to 34% of the samples who experienced technological disasters, and 42% of the samples who experienced natural disasters.

  - Disaster type and disaster location interacted to predict the sample's impairment. Almost all samples from developing countries experienced natural disasters, many of which were catastrophic in scope, involving high death tolls. Natural disasters in developing countries yielded a higher mean severity rating than did either natural or technological disasters elsewhere. However, within the developed countries, technological disasters had a significantly higher aggregate severity rating than did natural disasters. Thus, for the narrower purpose of understanding the typical impact of disasters in the United States, it is reasonable to expect that technological disasters, on average, will be more psychologically stressful than natural disasters. Technological disasters, however, were less disturbing than disasters of mass violence in both the United States and other developed countries.

  - Together, these 3 variables (disaster type, location, sample type) explained 30% of the variance in the sample's severity of impairment. The multiple correlation was .54.

- ***Disasters in the United States***. It was possible to identify several well-known events that were illustrative of disasters that had atypically weak, typical, or atypically strong effects on psychological outcomes. We searched for common denominators among events and samples similarly classified.

  - ***Atypically weak disasters*** were associated mostly with *minimal impairment* in the samples studied. These were exemplified by the 1989 Loma Prieta earthquake, the 1994 earthquake in Northridge, California, and the 1982 flood/dioxin contamination in the St. Louis Epidemiologic Catchment Area. Most samples in this group were not very seriously exposed or experienced little social disruption or had access to substantial personal and community resources.

  - ***Typical disasters*** were associated with *moderate impairment* in the samples studied. These were exemplified by the 1981 flood in Kentucky, Hurricane Hugo in 1989 in the Carolinas, and the 1979 nuclear accident at Three Mile Island. The diversity of events in this category point to a variety of processes that intersect to produce or protect against prolonged stress and distress. The effects of highly destructive events, such as Hugo, may be reduced by strong interpersonal and community supports, whereas the effects of less destructive events, such as the KY floods in

Appalachia, may be heightened by a low-resource context. Even in the absence of trauma and actual property loss, the effects of technological accidents may be comparable in magnitude because of victims' residual uncertainties, health concerns, and loss of trust.

- ***Atypically strong disasters*** were associated mostly with *severe or very severe impairment*. These were exemplified by Hurricane Andrew in 1992 in south Florida, the 1972 dam collapse in Buffalo Creek, West Virginia, the 1989 Exxon Valdez oil spill off the coast of Alaska, and the 1995 bombing of the Murrah Federal Building in Oklahoma City. These events caused massive destruction or threat to life and/or prolonged social and financial disruption and resource loss.

- ***Duration of Effects***. Twenty-seven panel studies (studies in which the same individuals are interviewed on multiple occasions) provided data on the course of postdisaster distress. Three primary trends were observed:

  - First, the general rule, observed in the vast majority of studies, was for samples to improve as time passed. These effects were not always simply linear, as some outcomes sometimes improved for a while, then stabilized or worsened for awhile, then improved again.

  - Second, levels of symptoms in the early phases of disaster recovery were good predictors of symptoms in later phases. Delayed onsets of psychological disorders were rare.

  - Third, symptoms usually peaked in the first year and were less prevalent thereafter, leaving only a minority of communities and only a minority of individuals within those communities substantially impaired.

- ***Summary and Conclusions***. A substantial amount of research pertinent to understanding the range, magnitude, and duration of the effects of disasters has been published over the past 20 years. A variety of events were studied in a variety of ways, the samples were impressively diverse, and individuals' experiences ranged from little more than inconvenience to severe trauma and loss. Accordingly, it is not surprising that results varied, with some samples showing only minimal and transient stress reactions and others showing prevalent and persistent psychopathology. Several conclusions can be drawn on the basis of the literature reviewed for PART I:

  - The range and distribution of outcomes suggests that a quality assessment of victims' mental health should include, at minimum: (1) a retrospective diagnostic assessment of PTSD, preferably one that anchors the symptoms to the disaster; (2) a brief measure of current nonspecific distress; and (3) an inventory of the acute and chronic stressors and resources losses associated with the event. Allowing 20 questions for (1), 10 questions for (2), and 20 questions for (3), we propose that a 50-item screening tool be developed for use in the field. Such a measure could be completed by most adults in 20 minutes or less.

  - The relative risk of sample types, in which youth were at greatest risk and rescue/recovery workers the least, points to an advantage of maturity and experience, a question that we return to in PART II of this report. In light of recent events in the United States, the effect for recovery workers should be interpreted with caution. While often exposed to horror, these rescue and recovery workers seldom experienced direct losses or extensive bereavement. However, it is also possible that we could learn from the capacity of such workers to support one another and to develop a meaningful narrative about their experience, questions to which we return in PART III.

  - That samples from outside the United States tend to be more severely impaired likely reflects the fact that disasters tend to be more destructive when they occur in the developing world. Many of the samples from developing countries survived disasters where death tolls were measured in thousands or even tens of thousands. If this effect reflects the importance of surviving in a context of massive destruction and death, rather than location per se, it may have relevance for the United States as it now grapples with the aftermath of a disaster of comparable enormity. The difference may also attest to the ability of government services and other resources to make a difference in the lives of disaster victims.

- Findings regarding the adverse consequences of experiencing disasters caused by malicious human intent were unequivocal. In the United States, technological disasters appear to be somewhat more stressful than natural disasters. From a more global perspective, it may be time to re-examine our ideas about the relative impact of natural and technological events. The literature in the field has changed markedly in the past decade. International research has mushroomed and many of these studies have found quite severe effects. Many of our ideas about the course of recovery from natural disasters are based very much on western experience where predisaster housing quality, controls over land use, and warning systems are far superior to the norms in developing countries.

- It should also be recognized that both natural and technological disasters varied considerably in their effects, as we found examples of low impact, moderate impact, and high impact events within each of these categories. Few of the incidents of mass violence had anything other than severe effects. Overall, from these illustrative studies and others similar to them in the database, we may conclude that (a) when injuries and deaths are rare, (b) when the destruction or loss of property is confined relative to the size and resources of the surrounding community, (c) when social support systems remain intact and function well, and (d) when the event does not take on more symbolic meanings of human neglect or maliciousness, disasters should have minimal consequences for mental health at the population level beyond those associated with transient stress reactions. Such events may compose a minority of those in the published literature, but probably a larger share of real life events in the United States. Such events probably do not require large-scale professional or even paraprofessional mental health interventions, although crisis intervention strategies that ameliorate the initial stress may be helpful.

- At a moderate level of impact, the typical result for major disasters in the United States, programs that can reduce stress, enhance social support, and provide reassurance about future risk are advisable at the community level. Such programs might encompass mechanisms for identifying and referring the minority of those with more serious impairment for professional treatment.

- Disasters that engender severe, lasting, and pervasive psychological effects are rare, but they do happen. **Sample (and presumably population) level affects were greatest when at least 2 of the following event-level factors were present**:

    - **Extreme and widespread damage to property**.
    - **Serious and ongoing financial problems** for the community
    - **Human carelessness or, especially, human intent** caused the disaster.
    - **High prevalence of trauma** in the form of injuries, threat to life, and loss of life.

  When such disasters occur, the need for professional mental health services will be widespread. Delivering them will pose a tremendous challenge but seems to be required.

- Persons who are most at risk for long-term distress can be identified fairly early in the process, which therefore points to a need for early screenings and interventions in disaster mental health. The question of which individuals within these communities are most likely to experience severe or long-term impairment is addressed in PART II of this report.

PART II: RISK FACTORS FOR ADVERSE OUTCOMES

- ***Purpose***. In this section, we focus on within-sample factors that influence who is most likely to experience serious and lasting psychological distress. As suggested by Freedy et al. (1992), we differentiated between *predisaster, within-disaster,* and *postdisaster* factors.

- ***Predisaster Factors***
  - ***Gender*** influenced postdisaster outcomes in 45 samples, as follows:
    - In 42 (93%) of 45 samples, women or girls were affected more adversely by disasters than men or boys. Panel studies indicated that psychological effects were not only stronger among women but more lasting as well.
    - The effects occurred across a broad range of outcomes, but the strongest effects were for PTSD, for which women's rates often exceeded men's by a ratio of 2:1.
    - The effects of gender were greatest within samples from traditional cultures and in the context of severe exposure.
  - ***Age and experience*** influenced disaster victims' outcomes in 17 samples, as follows:
    - Findings within the 3 child and adolescent samples did not yield a consistent pattern.
    - Older adults were at greater risk than were other adults in only 2 (14%) of the 14 adult samples. Rather than as an at-risk group, older adults might be viewed as a resource for disaster stricken communities.
    - In every American sample where middle-aged adults were differentiated from older and younger adults, they were most adversely affected. Some research suggests that middle-aged adults are most at risk because they have greater stress and burden even before the disaster strikes and assume even greater obligations afterwards.
    - Cross-cultural research suggests that the effects of age may differ across countries according to the social, political, economic, and historical context of the setting involved.
    - At least in lower magnitude disasters, prior experience with the specific type of event may reduce anxiety. People who have experienced disasters previously show higher levels of hazard preparedness and are more likely to evacuate when authorities suggest they do.
    - Professionalism and training increase the resilience of recovery workers, although past trauma per se does not.
  - ***Culture and ethnicity*** shaped the outcomes of disaster victims in 14 samples, as follows:
    - Cross-cultural studies of similar events using similar methods across 5 samples found effects to be greater in developing countries than in the United States.
    - Among youth, results for ethnicity were not consistent. In 2 (50%) of the 4 samples, majority groups fared better, and in 2 (50%) minority groups fared better.
    - Among adults, results for ethnicity were quite consistent. In 100% of the 5 samples, majority groups fared better than ethnic minority groups.
    - There is little explanatory research available, but the disproportionate risk of ethnic minorities appears to follow both from differential exposure to more severe aspects of the disaster and from culturally specific attitudes and beliefs that may impede seeking help**.**
  - ***Socioeconomic Status (SES)*****,** as manifest in education, income, literacy, or occupational prestige, was found to affect outcomes significantly in 11 samples of disaster victims. In 10 (91%) of these, lower SES was associated consistently with greater postdisaster distress. The effect of SES has been found to grow stronger as severity of exposure increases.

- ***Family Factors*** influenced outcomes in 19 samples, as follows:
  - Married status was a risk factor for women. Husbands' symptom severity predicted wives' symptoms more strongly than wives' symptom severity predicted husbands'. Marital stress has been found to increase after disasters.
  - Being a parent also added to the stressfulness of disaster recovery and, especially for events involving uncertain threats, mothers were especially at risk for substantial distress.
  - Children were highly sensitive to postdisaster distress and conflict in the family. Parental psychopathology, when measured, was typically the best predictor of child psychopathology. Less irritable, more supportive, and healthier parents had healthier children.
  - Interventions for children may be of limited effectiveness if the family is not considered as a whole. In fact, providing care and support to their overly stressed parents might be among the most effective ways to provide care and support to the children affected by disaster.
- ***Predisaster Functioning and Personality*** influenced outcomes in 22 samples, as follows:
  - Regardless of the method of data collection, predisaster symptoms were almost always among the best predictors (if not the best predictor) of postdisaster symptoms.
  - Many of these studies used lifetime diagnostic measures to assess a wide range of conditions before and after the disaster. Persons with predisaster psychiatric histories were disproportionately likely to develop disaster-specific PTSD and to be diagnosed with some type of postdisaster disorder.
  - In prospective studies using continuous measures of current symptoms, predisaster symptoms have been found to interact with severity of exposure. Participants with higher preflood symptoms were more strongly affected by the disaster than were participants with lower preflood symptoms.
  - A "neurotic," as opposed to stable and calm, personality increases the likelihood of postdisaster distress. "Hardiness" decreases the likelihood of postdisaster distress.

- ***Within-disaster Factors***
  - ***Individual- or household-level severity of exposure*** was an important predictor of outcomes in almost all samples, as follows:
    - All of the following have been found, at least in some studies, to predict adverse outcomes among survivors:
      - **Bereavement**
      - **Injury** to self or another family member
      - **Life threat**
      - **Panic** or similar emotions during the disaster
      - **Horror**
      - **Separation from family** (especially among youth)
      - **Extensive loss** of property
      - **Relocation** or displacement.
    - As the number of these stressors increased, the likelihood of psychological impairment increased.
    - In general, injury and life threat were most predictive of long term adverse consequences, especially PTSD.

- ***Neighborhood- or community-level severity of exposure*** was assessed only occasionally but had modest outcomes, as follows:
  - Personal loss was more strongly related to increases in negative affect, but community destruction was more strongly related to decreases in positive affect, reflecting a community-wide tendency for people to feel less positive about their surroundings, less enthusiastic, less energetic, and less able to enjoy life.
  - Such findings are an excellent reminder that disasters impact whole communities, not just selected individuals. No one would suggest that such "symptoms" constitute psychopathology or require professional intervention. Nonetheless, disasters may impair the quality of life in a community for quite some time.

- ***Postdisaster Factors***
  - Both life-event stress (discrete changes) and chronic stress were strong predictors of survivors' health outcomes. Moreover, stability and change in psychological symptoms were largely explained by stability and change in stress and resources.
  - Some research suggests that the long-term effects of *acute* stressors (the individual-level aspects of exposure outlined above) on psychological distress operate through their effects on *chronic* stressors, such as marital stress, financial stress, and ecological stress.
  - Attention needs to be paid to stress levels in stricken communities long after the disaster has happened and passed.
  - Because resources are such an important feature of the postdisaster environment, they are addressed in detail in Part III.

- ***Summary and Conclusions.*** A substantial amount of research pertinent to understanding risk factors for adverse outcomes has been published over the past 20 years. The research base is larger and more consistent for adults than it is for youth. Even for adults, more research on many of these topics would be quite useful and could eventually change the weight of the evidence. Nonetheless, at present, the literature reviewed for PART II yields the following conclusions:
  - **An adult's risk will increase linearly along with the number of these factors that are present:**
    - **Female gender**
    - **Age in the middle years of 40 to 60**
    - **Little previous experience or training** relevant to coping with the disaster
    - **Ethnic minority group membership**
    - **Poverty** or low socioeconomic status
    - **The presence of children** in the home
    - **For women, the presence of a spouse** especially if he is significantly distressed
    - **Psychiatric history**
    - **Severe exposure** to the disaster, especially injury, threat to life, and extreme loss
    - **Living in a highly disrupted or traumatized community**
    - **Secondary stress and resource loss**.
  - With a few modifications – primarily the deletion of age and minority group status -- this risk-factor model holds reasonably well for children and adolescents.
  - Families are extremely important systems and constitute the most important unit for postdisaster treatment and intervention efforts.

- Outreach efforts for intensive services should focus on areas of the community where at-risk individuals and families are most likely to live. Treatments and interventions known to be effective for them should be implemented. Attention to issues of diversity is important. Less intensive services, such as support groups and psycho-educational programs, may be adequate services for groups at lower risk.

- It is important to provide support to the supporters, especially wives and mothers.

- Groups at very low risk, such as older adults and childless men, should assume a greater share of the burden for the community's recovery through appropriate volunteer and paraprofessional activities.

PART III: PSYCHOSOCIAL RESOURCES IN THE AFTERMATH OF DISASTERS

- ***Purpose***. In this section, we organize findings regarding psychosocial resources by distinguishing between resources that are threatened by stress (*vulnerable resources*) and resources that emerge in response to stress (*emergent resources*). Emergent resources must be mobilized to replace or replenish the vulnerable ones. We first reviewed the evidence regarding the protection afforded by psychological and social resources, then the evidence regarding the potential for resource deterioration, then the evidence regarding resource mobilization in the aftermath of disasters.

- ***Protection Afforded by Psychological Resources.*** Psychological resources such as *coping efforts*, *self-efficacy, mastery, perceived control, self-esteem*, *hope,* and *optimism*, do protect disaster victims, as indicated by the following empirical results:

  - ***Ways of coping*** influenced symptom outcomes in several studies, but the findings were not always consistent across them. Avoidance coping and blame assignment were consistently problematic, but other ways of coping were sometimes helpful and sometimes not.

  - ***Beliefs about coping*** were far more important than ways of coping. What matters, apparently, is not how individuals actually cope but rather how they perceive their capabilities to cope.

  - ***Self-efficacy, mastery, perceived control, self-esteem, hope, and optimism*** all are related positively, strongly, and consistently to mental health in both the short-term and long-term.

- ***Protection Afforded by Social Resources.*** S*ocial embeddedness*, *received social support,* and *perceived social support* are all critical for disaster victims, as indicated by the following findings in the empirical research:

  - ***Social embeddedness*** -- the size, activeness, and closeness of the survivor's network – is related strongly and consistently to mental health.

  - ***Received social support*** is the actual helping behavior that emerges in response to stress. Although it usually is related positively to mental health, the findings are not entirely consistent, in part because levels of help received are confounded with need. Received support is important primarily because it protects and replenishes other resources, such as perceived social support.

  - ***Perceived social support*** is the most thoroughly researched social resource. With few exceptions, disaster survivors who subsequently believe that they are cared for by others and that help will be available, if needed, fare better psychologically than disaster survivors who believe they are unloved and alone.

- ***Resource Deterioration.*** The extent to which resources were lost may be the single most important thing to understand about a postdisaster environment, as indicated by the following research:

- ***Global indices of resource loss*** show that the greater the amount of resource loss, regardless of the specific resources, the greater the psychological distress. Several studies have found such measures to be the strongest predictor of symptom outcomes.

- ***Psychological resources,*** such as optimistic biases and perceived control, occasionally have been found to decline after disasters.

- ***Social resources***, specifically social embeddedness and perceived social support, appear to be especially vulnerable to the effects of disasters. The reasons are many, including loss of network members through death and relocation and community-wide changes in social activities. An important feature of disasters is the likelihood that potential supporters are victims themselves. As a result, the need for support across all affected may surpass its availability, leaving social networks unable to fulfill their supportive roles.

- ***The Social Support Deterioration Model***, which has been tested across several disasters, indicates that declines in social support account for a large share of victims' subsequent declines in mental health. Attending to the social needs of disaster victims could go a long way towards protecting them from long-term adverse psychological consequences.

- ***Resource Mobilization.*** Forces that engender resource deterioration can be counteracted by resource mobilization. It is therefore critical to understand the processes that influence the receipt or mobilization of postdiaster social support.

  - ***The Social Support Deterioration Deterrence Model***, an extension of the earlier deterioration model, shows that resource deterioration is *not* inevitable. When disaster victims receive too little help relative to their needs, their subsequent perceptions of social support deteriorate. However, when disaster victims receive help that is adequate relative to those needs, they maintain their expectations of support (and subsequent mental health).

  - ***Families and friends*** are relied upon more often, and with greater comfort, than outsiders and professional sources of support.

  - ***Emotional, informational, and tangible help*** are all important to disaster victims.

  - ***The rule of relative needs***, which means that the most help should go to those who need it the most, is followed appropriately by most communities.

  - ***The rule of relative advantage*** acknowledges that the distribution of postdisaster help is not governed by need alone. Within communities, the amount of received support increases as network size, help-seeking comfort, and economic well-being increases. These rules operate at the macro- as well as micro-level. Postdisaster "altrusitic communities" are less likely to develop in a context of low resources than in a context of high resources and after technological disasters than after natural disasters. To our knowledge, support mobilization has not been studied in the aftermath of mass violence.

  - ***Sustaining helping activities may be more difficult than mobilizing them.*** In time, attentive media and outsiders leave. Families and social networks become saturated with stories and shared feelings. Over time, fatigue, irritability, and scarcity of resources increase the potential for interpersonal conflict and social withdrawal. When support provisions are inadequate, inequitable, or too short-lived, the mobilization of support gives way to the deterioration of support.

- ***Summary and Conclusions.*** Although less extensive than research on the overall impact of disasters or on risk factors for adverse outcomes, the empirical database on resources has grown tremendously in recent years. These data yield the following conclusions and recommendations:

- Naturally occurring psychosocial resources provide important protection against adverse symptom outcomes. Unfortunately, these same protective resources are themselves vulnerable to the impact of disasters and sometimes decline or deteriorate in strength. Fortunately, such deterioration is unlikely when postdisaster support provisions are adequate, equitably distributed, and sufficiently lasting to need survivors' needs.

- A limitation is that the data in support of this perspective emerged primarily from studies of natural disasters. Although some of the natural disasters studied have been quite serious, it has not been established that naturally occurring resources are powerful enough to overcome the effects of the profound trauma that accompanies mass violence. It also has not been established that such resources and processes effectively protect survivors from PTSD, as most of the studies predicted levels of nonspecific distress. This is not to say that resources are not important in the context of mass violence, only that they have not been studied very much.

- We should educate survivors, and those who come into contact with them, that avoidance and blame assignment are rarely effective coping strategies. Otherwise, however, the specific ways of coping matter much less than do people's perceptions of themselves as able to cope and control outcomes. It may be more important for disaster workers to reassure survivors that they do, in fact, have what it takes to meet the demands faced.

- A focus on self-efficacy does not mean that mental health services are not needed, but rather that such services should be delivered in a way that provides resources without threatening them. Some people are more likely to accept help for "problems in living" than to accept help for "mental health problems." In exercising our good intentions to help victims, we must not inadvertently rob them of the very psychological resources they need to persevere over the long term.

- Naturally occurring social resources are particularly vital for disaster victims. Professionals and outsiders are important sources of assistance when the level of need is high, but they must not and cannot supplant natural helping networks. People should *not* abandon their routine social activities because these keep people informed about the relative needs of network members, provide natural forums for sharing experiences, and preserve a sense of social embeddedness. It also might be helpful to educate the public about the reasons significant others may not always be able to provide them with the quality or quantity of interpersonal support they expect.

- A number of implications for intervention can be drawn from the results in Part III. Whether directed toward the community, family, or individual, the emphasis for interventions should be on empowerment, meaning they draw upon and build strengths, capabilities, and self-sufficiency.

    - **Community-focussed interventions** for enhancing social resources will vary depending upon the disaster, the setting, and the culture. General recommendations are as follows:

        - Collective grieving expresses solidarity and facilitates unity and collective action.
        - Keep people in their natural groups if they must be relocated.
        - Provide social activities for new communities formed because of displacement, especially if natural groups have not been retained.
        - Group meetings, in which participants brainstorm about various themes for rebuilding the community, help survivors to recognize the reality of loss, to identify and discuss local problems, and to work together towards an achievable, specific goal.
        - By emphasizing inclusiveness, the above activities must reach out to people who might feel isolated or marginalized. Community members also might canvas the community to learn of others' needs.

    - **Family-focussed interventions** are very important. Most people are most comfortable seeking and receiving help from family members, yet family members also are a significant source of strain and conflict (see PART II). Disaster workers should search for effective ways to build and sustain support at the family level. The following are only a few general suggestions:

        - Encourage families to talk together about their experiences, losses, and feelings.
        - Encourage families to resume normal activities to the extent possible.
        - Help families handle conflict appropriately so as to minimize negative encounters caused by the strain, fatigue, and irritability that often follow trauma.

    - **Individual-focussed interventions** are costly and often unnecessary. They should be reserved for those persons who are most distressed, who had weak psychological and social resources to begin with, or who suffered particularly dire resource losses. If it is recalled that resources must be invested in order to acquire new ones, it will be understood that the people who need such services the most may be least likely to seek them. Outreach to such persons, and to the communities in which they are most likely to live, is essential.

- Clearly, resources matter in times of stress. We believe that the concepts of emergent and vulnerable resources may be helpful not only for organizing the research but for organizing information about a specific community's resources. Our goal is to help disaster-stricken communities plot strategies that increase the emergence of resources and decrease the vulnerability of resources. Providing indigenous networks with the resources they need to help one another is (or should be) the primary objective of disaster mental health policy. The ultimate task is to foster a mobilization of community support that will be powerful, inclusive, and lasting enough to conquer the spiral of losses.

AFTERWARD: **Some Personal Observations on the State of Disaster Research**

- In the afterward, the primary author shares her opinions about the state of the art in disaster research, acknowledging both problems and prospects. On the basis of this review, she observes that we do not need more research that establishes only that severely exposed disaster victims develop psychological disorders or, worse, that barely exposed disaster victims do not.

- **What is needed is**:

    - More information about **diverse populations**;
    - More information about **mechanisms and protective factors**;
    - More complex studies of **family systems and community-level processes**;
    - More **representative samples**;
    - More **longitudinal designs** that integrate short-term and long-term effects;
    - More investigations that test ideas about risk and protective factors via **action research**; and
    - More **collaboration** between researchers and practitioners.

- The author states her hopes that this review will assist new entrants to the field and that they will bring insights from other areas that add to our understanding of the processes through which individuals and communities recover after disasters.

- The author expresses her gratitude to the *Best Practices Project (a*n interagency cooperative agreement between the Center for Mental Health Services and the National Center for PTSD) for the opportunity to conduct this review, describes the extraordinary context under which this document was completed, and thanks her colleagues for their invaluable assistance and support.